Lead Character Technical Developer / Lead Technical Animator

For all shots, performances were created in Virtual Production using Volumetric Capture of actor face and body performances live.

Photorealistic Faces and Digital Doubles were constructed from the volumetric capture of the actors. I used advanced 3D mesh manipulation of synthetic data to create photo realistic faces. Then photogrammetry and photometric textures were applied based on the camera data.

I reconstructed the face performances using data sets from volumetric capture and then enhanced the facial expressions and body performances.

I take the data that comes out of the volumetric capture session and I reconstruct the head and chest using all facial expressions from the actor's performance.

The resulting normalized geometry is re-textured using the actual camera data from the actor's performance.

I apply a FACS- based facial rig to this normalized geometry and then I add this to a CG performance capture body.

The final result is a photorealistic face from the actual actor which can now be re-animated using a virtual camera to enhance the original performance according to a director's wishes.

I designed a method to introduce proximity wrap to incorporate a FACS-based rig to augment facial performance after volumetric capture.

Aquaman and the Lost Kingdom:
In addition to photoreal face performance reconstruction for all main characters Arthur, Atlanna, Mera and Orm, I also designed the methodology for torso scanning on Mera and Karshon. I designed the methodologies for Arthur's beard removal, jaw reconstruction and jaw performance tracking. I also did volumetric capture rigs.

Shot Breakdown:
1) Arthur swims toward Black Manta
2) Arthur attempts to punch Black Manta, gets blasted by sonic cannon
3) Mera rides shark vehicle - camera zoom
4) Atlanna jumps off shark vehicle
5) Atlanna grabs onto enemy ship
6) Mera rides shark vehicle through high speed underwater tunnel
7) Mera pulls shark vehicle out of high speed tunnel
8) Mera rides shark vehicle out of high speed tunnel and casts magic

9) Mera leaps off shark vehicle and swims toward camera
10) Mera unconscious
11) Arthur shows up - "Get away from my wife!"
12) Arthur swims downward into the depths
13) Arthur stops train with this trident
14) Arthur swims past camera
15) Arthur rides on top of jajus
16) Jajus takes off with Arthur riding "whoa"
17) Arthur riding looks to his right at Orm off-camera
18) Arthur riding from far screen left to close-up
19) Arthur looks over his shoulder while riding
20) Arthur riding towards camera
21) Arthur grabs tank and helmet and leaps off frame
22) Mera rescues Arthur with water magic
23) Mera conjures water magic
24) Mera in battle fights using magic
25) Arthur punches Black Manta
26) Octopus riding sea dragon grabs Arthur and Orm

The Flash
I did face performance reconstruction and augmentation from volumetric capture data
for two babies, Sandwich Guy, Dark Flash face, and older/younger Barry

1) Babies fall out of window
2) Babies fly through the sky
3) Baby protected in microwave
4) Time travel Sandwich Guy
5) Sandwich Guy is pulled into the time vortex "Is this fast enough for you?"
6) Time loop Dark Flash
7) Older Barry talks to younger Barry who sits on floor
8) Older Barry and younger Barry screen right
9) Older Barry walks around younger Barry
10) Older Barry and younger Barry screen left

The Gray Man
I did the head geo stabilization for the performance capture of characters Six and Perini.

1) Six falls from the sky onto Perini's chute, fights and chokes Perini out

Black Adam
I did face performance reconstruction and augmentation from volumetric capture data for Black Adam.
1) Black Adam drops intergang villain while flying

2) Black Adam turns and flies past camera
3) Black Adam shoots lightning while flying

Beverly Hills Cop: Axel F
Eddie Murphy's digital double, face and body rigs.

1) Digital double Axel F drives parking enforcement vehicle downstairs
2) Digital double Axel F drives parking enforcement vehicle at the bottom of steps
3) Digital double Axel F tips the vehicle on side and it skids to a halt
4) Digital double Axel F in the helicopter crash

The Batman
I did face performance reconstruction and augmentation from volumetric capture data for both Batman characters.

1) Batman (Robert Pattinson) fights
2) Batman (Robert Pattinson) cuts electrical cable and falls into water
3) Batman from The Flash (Michael Keaton) walks up to camera, "I am Batman"